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# Avalanche Notes

INT FOREST & RANGE  
EXPERIMENT STATION

MAY 23 1985

U.S. Forest Service  
Westwide Avalanche Network

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## April 1985

By the time April arrived, winter had nothing left and ended with a whimper in the West. Almost all sites recorded below-normal snowfall for the month. In Alaska, Alyeska reported 93% of normal...in the Cascades of Washington, Crystal Mtn, 62%; Mt. Rainier, 74%; and Stevens Pass, 130%...in the Sierra of California, Alpine Meadows, 35%...in the Wasatch of Utah, Alta, 51%; and Snowbird, 36%...and in Colorado, Winter Park, 64%; Berthoud Pass, 89%; and Gothic, 140%. A few storms were worth noting: Alyeska recorded 30 inches of snowfall on the 7th-9th, and 32 inches on the 15th-17th; Stevens Pass received 20 inches on the 23rd-24th; Mt. Rainier measured 42 inches on the 22nd-27th; and Marvine Ranch, CO got 28 inches on the 19th-21st.

There were no major wet-slab cycles and only one accident of note in April. On the 1st, a slide path above the Ruby Trust Mine in the San Juan Mtns of Colorado was bombed and ran extra large. It struck the mine building and caused damage estimated at \$60,000.

## May 1985

Two serious accidents occurred in early May, in time to make this final edition of Avalanche Notes. On the 3rd at Gothic, CO, a ski mountaineer (skis off at the time) released a wet slab that carried him down some 800 feet in elevation and over two cliff bands. His injuries were severe: a crushed pelvis, multiple breaks of the wrist, and possible breaks of the femur and ribs. On the 12th on Whitehorse Mtn, WA, four climbers were caught in a wet-slab avalanche. Two were partly buried and one totally buried except for fingertips. These three were rescued unharmed, but the fourth--a woman--could not be found. The following day a probe line located her body beneath 6 feet of snow. This was the 13th avalanche death of the season. Table 1 summarizes this winter's avalanche statistics through mid-May.

## Winter Summary

AVALS	17
HURT	17
KILLED	13
SITE	15
DEATHS	13

Table 2 compares avalanche statistics for the last 15 years. The winter of 84-85 was below average in number of avalanches reported and in almost all accident categories. Injuries--17--were above normal and deaths--13--were right on the 15-year average.

Table 3 presents snowfall totals for all regularly reporting Westwide sites. The percent-of-normal figures show that 84-85 wound up on the dry side in virtually every area of the mountain West. Only four sites--all in Colorado--managed above-normal snowfalls. All others achieved only 63-96% of normal.

Looking Ahead

Avalanche Notes will return in November. There are two events scheduled for late fall that many of you will be interested in. On October 25-27 an Avalanche Weather Seminar is scheduled for Snowbird, UT. This seminar is sponsored by the American Avalanche Institute and The Avalanche Review, and all recipients of Avalanche Notes will receive further notice of this seminar. And the 1985 National Avalanche School is scheduled for Reno, NV on November 3-7. Further information can be obtained by writing to the National Avalanche Foundation, 2638 Dapplegray Lane, Walnut Creek, CA 94596-6699.

May you all enjoy a warm and safe summer.

Table 1: Regional Avalanche Summary, Winter of 1984-85

Area	Total Avalanches Reported				Damage Summary - This Winter							
	This month	This winter	People	Vehicles	Avalanche Damaged			Bldgs	Lifts	Misc		
	C	B	I	K	B	D	Bldgs	Lifts	Misc			
Central and So. Rockies	177	2441	42	14	4	5	4	0	4	0	0	0
Intermountain	42	1520	28	15	5	5	0	0	0	0	0	0
West Coast	99	2942	43	12	8	3	4	0	0	0	0	2
All Areas	318	6903	113	41	17	13	8	0	4	0	0	2

Table 2: Annual Avalanche Summaries for the U.S.

WINTER	AVALANCHES	PEOPLE				VEHICLES			avalanche damaged			ESTIMATED PROPERTY DAMAGE	
		C	B	I	K	B	D	Bldgs	Lifts	Misc	\$		
1984-85	6,903	113	41	17	13	8	0	4	0	2	\$	80,000	
1983-84	7,161	122	42	20	14	27	7	4	0	6		140,000	
1982-83	11,822	174	68	20	14	32	11	5	4	3		80,000	
1981-82	10,102	212	78	16	19	77	25	10	8	8		1,700,000	
1980-81	5,695	131	58	7	23	5	1	0	2	0		10,000	
1979-80	10,669	136	44	9	6	34	16	7	1	19		650,000	
1978-79	9,420	159	62	16	11	54	24	5	1	4		1,250,000	
1977-78	11,151	155	71	16	17	19	5	5	3	2		300,000	
1976-77	3,764	98	35	13	10	3	0	2	0	0		500	
1975-76	7,905	177	81	15	17	13	6	1	1	1		100,000	
1974-75	10,387	195	79	9	22	30	5	4	1	2		150,000	
1973-74	11,782	159	92	13	13	54	16	11	2	7		300,000	
1972-73	9,965	92	35	3	5	11	1	4	2	2		200,000	
1971-72	6,975	168	63	17	5	21	4	11	2	12		300,000	
1970-71	4,066	58	46	10	12	19	3	13	2	8		500,000	
AVERAGE	8,518	143	59	13	13	28	8	6	2	5	\$	384,000	

Table 3: Snowfall Totals for the Winter of 1984-85 (with percents of normal for sites with 10 or more years of record)

State	Dec-Mar (inches)	% of Normal	Nov-Apr (inches)	% of Normal
<u>Alaska</u>				
Alyeska	275	77%	393	
Eaglecrest	248			
<u>California</u>				
Alpine Meadows	225	86%	272	90%
Squaw Valley	162	80%	251	
Sugar Bowl	249			
<u>Colorado</u>				
Arapahoe Basin	146			
Aspen Highlands	206			
Aspen Mtn.	194	116%		
Bear Lake	136			
Beaver Creek	231			
Berthoud Pass	183	90%	285	94%
Breckenridge	190	90%		
Copper Mtn.	160	89%		
Crested Butte	156	88%		
Gothic	235	91%	316	95%
Loveland Pass	131	86%		
Marvine Ranch	123			
Mary Jane	242			
Monarch	195	110%	253	
Purgatory	233			
Sunlight	189			
Telluride	183			
Vail	266	103%		
Winter Park	131	86%	192	86%
Wolf Creek	364	120%		
<u>Idaho</u>				
Schweitzer Basin	131			
Sun Valley	106			
<u>Montana</u>				
Big Sky	158			
Bridger Bowl	224	92%		
<u>New Mexico</u>				
Taos	162	96%		
<u>Oregon</u>				
Mt. Hood Meadows	291	77%		
Multorpor	241			
<u>Utah</u>				
Snowbird	304	84%	428	87%
Solitude	217			
<u>Washington</u>				
Crystal Mtn. 1	187	63%		
Crystal Mtn. 2	235	66%		
Mt. Rainier-Paradise	410	82%	622	88%
Snoqualmie Pass	300			
Stevens Pass	283	80%		
Stevens Pass US 2	258		428	
<u>Wyoming</u>				
Grand Targhee	183			
Jackson Hole	244	77%		
Teton Pass	206			

Table 4: Avalanche Totals for the Winter of 1984-85

<u>Ski Areas</u>	<u>No.</u>	<u>Highways, Mines, National Parks and Miscellaneous Areas</u>	<u>No.</u>
1. Alpine Meadows, CA	732	1. Gothic, CO	327
2. Bridger Bowl, MT	396	2. Red Mtn. Pass, CO	303
3. Taos, NM	371	3. Loveland Pass, CO	206
4. Big Sky, MT	333	4. Berthoud Pass Research Area, CO	174
5. Crystal Mtn, WA	301	5. Stevens Pass U.S.2, WA	139
6. Alyeska, AK	298	6. Snoqualmie Pass I-90, WA	131
7. Squaw Valley, CA	297	7. San Juan Mtns, CO	55
8. Snowbird, UT	244	8. Urad-Henderson Mine, CO	31
9. Mt. Hood Meadows, OR	235	9. Mt. Rainier Nat. Park, WA	30
10. Kirkwood Meadows, CA	229	10. Teton Pass, WY	18
11. Mammoth Mtn, CA	218	10. Wolf Creek Pass, CO	18
12. Jackson Hole, WY	213	12. Wasatch Range, UT	14
13. Alta, UT	190	13. Berthoud Pass U.S. 40, CO	13
14. Aspen Snowmass, CO	175	14. Alaska Backcountry	11
15. Mt. Rose/Slide Mtn, NV	154	15. Silverton, CO	9
16. Aspen Highlands, CO	134	16. Colorado Highway 110	6
17. Breckenridge, CO	108	17. Elk Mtns, CO	3
18. Arapahoe Basin, CO	95	17. Lizard Head Pass, CO	3
18. Loveland Basin, CO	95	19. Washington Backcountry	2
20. Crested Butte, CO	94	20. Grand Teton Nat. Park, WY	1
21. Solitude, UT	92	20. Idaho Backcountry	1
22. Wolf Creek, CO	58	20. Snowy Range, WY	1
23. Sugar Bowl, CA	53		
24. Eaglecrest, AK	47		
25. Copper Mtn, CO	37		
26. Monarch, CO	36		
27. Mission Ridge, WA	32		
28. Sunlight, CO	30		
29. Vail, CO	26		
30. June Mtn, CA	19		
31. Schweitzer Basin, ID	16		
32. Heavenly Valley, CA	13		
33. Aspen Mtn, CO	9		
33. Beaver Creek, CO	9		
33. Steamboat, CO	9		
36. Telluride, CO	6		
37. Park City/Parkwest, UT	2		
38. Stevens Pass, WA	1		

U.S. FOREST SERVICE  
ALPINE SNOW AND AVALANCHE RESEARCH PROJECT  
RM STATION FORT COLLINS, COLO.

APRIL 1985

SUMMARY OF WEATHER AND SNOW CONDITIONS

AREA	SNOWFALL			WATER EQUIVALENT			SNOW DEPTH			TEMPERATURE			WIND SPEED AND DIRECTION											
	TOTAL IN.	MAX IN.	D	TOTAL IN.	MAX IN.	D	Avg. IN.	MIN IN.	Avg. IN.	MAX IN.	MIN IN.	Avg. IN.	Avg. MPH	Hour FOR PERIODS GE	Fastest Avg. Hour	Dir. Dir.								
CENTRAL AND SOUTHERN ROCKY MOUNTAINS																								
BEAR LAKE, KMANP, CO	57.2	.09	11	20	3.35	.91	20	11	5	2	0	54	1	36	43	35.3	25.2	30.3	--	--	--	--	--	
BERTHOUD PASS, COLO	49.0	.09	9	5	4.17	.95	5	13	8	2	0	76	5	59	67	39.2	18.1	28.6	--	--	--	--	--	
GOTHIC, COLO	44.5	.08	8	25	3.60	.65	25	10	7	3	0	82	1	48	59	45.0	18.9	32.0	--	--	--	--	--	
MARVINE RANCH, COLO	37.0	.10	16	21	3.63	1.28	21	7	4	4	1	57	1	18	54	49.7	20.8	35.3	--	--	--	--	--	
MONARCH, COLO	33.9	.10	8	27	3.55	1.00	27	9	8	2	1	81	1	51	61	40.0	21.4	30.9	--	--	--	--	--	
WINTER PARK 1E, COLO	24.0	.08	5	19	2.14	.36	19	7	4	0	0	44	1	28	38	44.7	21.1	32.9	--	--	--	--	--	
INTERMOUNTAIN																								
ALTA, UTAH	33.5	.15	9	1	5.22	1.55	1	8	8	4	1	106	1	67	82	44.1	28.6	36.4	--	--	--	--	--	
SNOWBIRD, UTAH	27.0	.13	7	22	3.68	1.02	1	8	6	3	1	102	1	37	60	50.1	27.9	39.0	20.0	--	--	--	--	--
WEST COAST																								
ALPINE MEADOWS, CAL	12.0	.15	5	22	1.83	.82	22	4	4	1	0	91	1	52	70	50.6	31.7	41.2	17.6	74	52	45	210	
ALYESKA, ALASKA	80.5	.07	21	15	5.00	1.20	15	10	10	6	1	151	16	117	131	33.6	17.9	25.8	4.8	3	0	23	140	
CRYSTAL MTN 1, WASH	26.2	.07	6	24	3.51	.62	23	9	7	2	0	67	1	50	57	39.3	25.1	32.2	11.3	25	5	--	--	
CRYSTAL MTN 2, WASH	37.6	.09	8	24	4.24	.60	24	16	9	2	0	96	1	73	86	39.7	27.5	33.6	--	--	--	--	--	
MT. HOOD HILLS, ORE.	44.5	.05	10	23	2.47	.71	23	7	5	1	0	166	1	130	144	46.5	26.8	36.7	16.2	70	56	60	270	
MT. RAINIER PARADISE	56.0	.11	11	23	8.43	1.48	23	16	12	7	1	191	1	151	165	41.7	26.6	34.1	7.3	21	6	45	260	
MUL TORMOR SKI BLD, OR	38.0	.07	10	20	3.05	.74	23	6	5	2	0	110	1	64	85	46.1	30.1	38.1	6.3	0	0	--	--	
SQUAW VALLEY, CALIF	35.5	.07	1	17	.25	.11	19	1	0	0	0	102	1	64	80	64.3	30.6	47.5	--	--	--	--	--	
STEVENS PASS, SE WASH	45.1	.09	10	23	7.40	1.33	24	12	12	5	3	102	1	70	82	44.0	29.5	36.8	--	--	--	--	--	

-- DATA INCOMPLETE OR MISSING  
M=ONE OR MORE DAYS OF RECORD MISSING--IF AVERAGE VALUE IS ENTERED, LESS THAN 10 DAYS RECORD IS MISSING  
IF M IS ENTERED IN WIND SPEED COLUMN, LESS THAN 37 6-HOUR PERIODS ARE MISSING  
G=GREATER THAN OR EQUAL TO

U.S. FOREST SERVICE  
ALPINE SNOW AND AVALANCHE RESEARCH PROJECT  
APRIL 1985  
AVALANCHE SUMMARY

AREA	THIS MONTH NO.	THIS WINTER NO.	TOTAL	TOTAL DATES OF	NUMBER OF DAYS WITH	TYPE OF AVALANCHE						FRACTURE LINE HEIGHTS IN FEET						VERTICAL DESCENT IN FEET						AVALANCHE ACROSS MAJOR ACCESS ROADS NO.	
						A	V	A	L	S	F	MAX	IN	D	L	A	R	A	W	E	S	G <sup>a</sup>	G <sup>b</sup>	G <sup>c</sup>	G <sup>d</sup>
<b>CENTRAL AND SOUTHERN ROCKY MOUNTAINS</b>																									
ASPEN HIGHLANDS, COLO	11	134	5	13	4	8	6	0	0	11	0	2	4	5	5	2	0	11	6	5	2400	0			
ASPEN SNOWMASS, COLO	7	175	5	24	3	24+	3	0	1	6	1	3	3	0	3	3	2	3	0	0	375	0			
BERTHOUD PASS, COLO	13	174	1	23	5	1	6	1	3	10	1	8	0	4	2	1	1	6	0	0	500	0			
BERTHOUD PASS U.S. 40	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
BRECKENRIDGE, COLO	12	108	2	19	3	19+	5	2	12	0	6	6	0	0	3	0	0	9	0	0	325	0			
GOTHIC, COLO	39	326	1	20	11	11	9	0	0	39	0	3	12	24	12	2	0	38	31	15	1700	0			
LIZARD HD PASS, COLO	1	5	8	8	1	8	1	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1800	1		
LOVELAND BASIN, COLO	13	95	1	5	6	1	4	3	11	2	6	7	0	0	12	4	3	9	0	0	275	0			
LOVELAND PASS U.S. 6	28	206	1	19	11	5	5	0	4	24	6	16	6	0	17	4	1	26	11	3	1500	2			
RED MTN PASS U.S. 550	39	303	1	23	8	11	13	0	3	36	0	1	22	16	11	0	0	36	32	16	1700	17			
SAN JUAN MTS, COLO	7	55	1	8	5	1	3	0	6	1	0	6	1	0	6	5	0	7	7	6	2500+	4			
URAD MINL, COLO	1	31	5	5	1	5	1	0	0	1	0	0	1	0	1	0	0	1	1	1	1800	0			
VAILE, COLO	6	26	11	15	2	15+	4	0	6	0	0	1	0	5	1	1	0	2	0	0	350	0			
<b>INTERMOUNTAIN</b>																									
BRIDGER BOWL, MONT	17	396	2	16	6	16+	5	0	8	9	0	6	7	4	7	1	0	17	10	5	1100	0			
SNOWBIRD, UTAH	25	244	1	23	10	23	6	0	19	6	0	19	1	5	10	0	0	21	16	5	2200	0			
<b>WEST COAST</b>																									
ALPINE MEADOWS, CAL	7	732	21	22	6	22	2	0	6	1	0	7	0	0	0	0	0	0	0	6	0	350	0		
ALYESKA, ALASKA	46	298	7	29	16	6	5	0	42	4	4	40	0	2	22	1	0	46	42	15	1500	0			
CRYSTAL MTN, WASH	12	301	5	8	6	8	3	0	30	2	0	6	6	1	0	0	12	3	0	900	0				
KIRKWOOD MDWS, CAL	7	229	17	17	7	17	1	0	7	0	0	7	0	0	0	0	7	6	0	600	0				
MT. HOOD MEADOWS	16	235	19	25	5	25+	3	2	16	0	0	15	0	1	0	0	6	1	0	600	0				
MT. RAINIER, WASH	0	30	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
STEVENS PASS U.S. 2	11	139	1	27	4	27	4	0	7	4	0	2	3	6	3	0	0	0	0	0	5	1500	2		

--DATA INCOMPLETE OR MISSING  
GL=GREATER THAN OR EQUAL TO  
+=ALSO OCCURRED ON OTHER DAYS